Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

1 - 4. (Cancelled)

5. (previously presented) A computer-implemented method of parsing a mathematical optimization problem comprising:

reading a plurality of algebraic expressions that represent a mathematical optimization problem, each algebraic expression in said plurality having one or more mathematical terms;

creating a set of signomial expressions by converting each of said mathematical terms to a signomial, at least one of said signomial expressions having a negative coefficient; and

converting said set of signomial expressions to a compact numeric format to be accepted by a computer-aided geometric program solver.

6. (Original) The method of Claim 5, wherein said algebraic expressions include an objective and a set of one or more constraints.

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7. (Original) The method in claim 6, wherein:

said objective includes an expression of one or more mathematical terms; and

each constraint in said set includes either an inequality or equality of one or more mathematical terms.

8. (Original) The method in claim 7, wherein:

each mathematical term includes one or more optimization variables.

9. (Original) The method of Claim 5, further comprising:

prior to said converting, determining that all signomial expressions in said set reduce to either a posynomial objective, a posynomial inequality or a monomial inequality;

after said determining, identifying that said mathematical optimization problem is a geometric program.

10. (Original) The method of Claim 5, further comprising:

prior to said converting, determining that at least one of said signomial expressions in said set cannot be reduced to either a posynomial objective, a posynomial inequality or a monomial inequality;

after said determining, reporting to a user which of said signomial expressions in said set cannot be reduced to either a posynomial objective, a posynomial inequality or a monomial inequality.

11. (Original) The method of Claim 10, further comprising the step of:

simplifying each signomial expression in said set by mathematically canceling

a combination of a plurality of said signomials.

12 – 22 (Cancelled)

23. (currently amended) A computer implemented method, comprising:

preparing input expressions for a geometric program solver by executing the

following in software:

converting a plurality of algebraic expressions that represent a geometric

program ~~into a format that is acceptable to geometric program solver~~

~~software~~, said converting comprising for ~~each~~ an algebraic expression of said

plurality of algebraic expressions:

    a) converting said algebraic expression into a signomial expression by

    converting terms of said signomial expression into a signomial

    function;

    b) reducing said signomial expression to one of the following:

        1) a posynomial objective;

        2) a posynomial inequality;

        3) a monomial equality.

24. (currently amended) The method of claim 23 wherein said method further

comprises making a substitution if said algebraic expression contains an internal

variable that represents a previously assigned expression.

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25. (Previously Presented) The method of claim 23 further comprising simplifying the signomial expression by canceling two identical signomial functions of opposite sign.

26. (Previously Presented) The method of claim 23 further comprising finding said algebraic expressions within lines of an input source file.

27. (currently amended) The method of claim 23 wherein ~~each one of~~ said algebraic expressions is one of the following:

        1) an objective function;

        2) an equality constraint;

        3) an inequality constraint.

28. (Previously Presented) The method of claim 23 wherein said geometric program is a signomial program.

29. (currently amended) A computer implemented method, comprising:

<u>preparing input expressions for a geometric program solver by executing the following in software:</u>

converting a plurality of algebraic expressions that represent a geometric program ~~into a format that is acceptable to geometric program solver~~

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~~software~~, said converting comprising for ~~each~~ an algebraic expression of said plurality of algebraic expressions:

combining mathematical terms of said algebraic expression to reduce said algebraic expression to one of the following:

      1) a posynomial objective;

      2) a posynomial inequality;

      3) a monomial equality.

30. (Previously Presented) The method of claim 29 wherein said mathematical terms are from the group consisting of:

      signomial;

      posynomial; and,

      monomial.

31. (Previously Presented) The method of claim 30 wherein said combining mathematical terms comprises identifying each mathematical term as a signomial, posynomial or monomial.

32. (Previously Presented) The method of claim 31 wherein said combining mathematical terms comprises determining if operators and functions that relate said mathematical terms permit said reduction.

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33. (Previously Presented) The method of claim 31 wherein said posynomial inequality is a posynomial function less than one and said monomial inequality is a monomial function equal to one.

34. (Previously Presented) The method of claim 29 wherein said posynomial inequality is a posynomial function less than one and said monomial inequality is a monomial function equal to one.

35. (Previously Presented) The method of claim 29 further comprising finding said algebraic expressions within lines of an input source file.

36. (currently amended) The method of claim 29 wherein ~~each one of~~ said algebraic expressions is one of the following:

       1) an objective function;

       2) an equality constraint;

       3) an inequality constraint.

37. (Previously Presented) The method of claim 29 wherein said geometric program is a signomial program.

38. (currently amended) Program code embedded on a readable medium which when executed by a computer causes a method to be performed, said method comprising:

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preparing input expressions for a geometric program solver by executing the following in software:

converting a plurality of algebraic expressions that represent a geometric program ~~into a format that is acceptable to geometric program solver software~~, said converting comprising for ~~each~~ an algebraic expression of said plurality of algebraic expressions:

a) converting said algebraic expression into a signomial expression by converting terms of said signomial expression into a signomial function;

b) reducing said signomial expression to one of the following:

1) a posynomial objective;

2) a posynomial inequality;

3) a monomial equality.

39. (currently amended) The method of claim 38 wherein said method further comprises making a substitution if said algebraic expression contains an internal variable that represents a previously assigned expression.

40. (Previously Presented) The method of claim 38 further comprising simplifying the signomial expression by canceling two identical signomial functions of opposite sign.

41. (Previously Presented) The method of claim 38 further comprising finding said algebraic expressions within lines of an input source file.

42. (currently amended) The method of claim 38 wherein ~~each one of~~ said algebraic expressions is one of the following:

    1) an objective function;

    2) an equality constraint;

    3) an inequality constraint.

43. (Previously Presented) The method of claim 38 wherein said geometric program is a signomial program.

44. (currently amended) Program code embedded on a readable medium which when executed by a computer causes a method to be performed, said method comprising:

preparing input expressions for a geometric program solver by executing the following in software:

converting a plurality of algebraic expressions that represent a geometric program ~~into a format that is acceptable to geometric program solver software~~, said converting comprising for ~~each~~ an algebraic expression of said plurality of algebraic expressions:

combining mathematical terms of said algebraic expression to reduce said algebraic expression to one of the following:

    1) a posynomial objective;

    2) a posynomial inequality;

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3) a monomial equality.

45. (Previously Presented) The method of claim 44 wherein said mathematical terms are from the group consisting of:

signomial;

posynomial; and,

monomial.

46. (Previously Presented) The method of claim 45 wherein said combining mathematical terms comprises identifying each mathematical term as a signomial, posynomial or monomial.

47. (Previously Presented) The method of claim 46 wherein said combining mathematical terms comprises determining if operators and functions that relate said mathematical terms permit said reduction.

48. (Previously Presented) The method of claim 46 wherein said posynomial inequality is a posynomial function less than one and said monomial inequality is a monomial function equal to one.

49. (Previously Presented) The method of claim 44 wherein said posynomial inequality is a posynomial function less than one and said monomial inequality is a monomial function equal to one.

50. (Previously Presented) The method of claim 44 further comprising finding said algebraic expressions within lines of an input source file.

51. (currently amended) The method of claim 44 wherein ~~each one of~~ said algebraic expressions is one of the following:

      1) an objective function;

      2) an equality constraint;

      3) an inequality constraint.

52. (Previously Presented) The method of claim 44 wherein said geometric program is a signomial program.

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